

3.18 WILDFIRE

This section evaluates the wildfire-related impacts associated with adoption and implementation of the proposed Project. This section describes the regulatory framework and existing conditions; identifies criteria used to determine impact significance; provides an analysis of the potential wildfire impacts; and identifies proposed General Plan 2045 goals and policies that would minimize potentially significant impacts.

This section is based in part on the Livermore General Plan Update Existing Conditions Report prepared in March 2022 (City of Livermore 2022). Where more recent data is available at the time of preparation of this Draft EIR, the analysis provided herein reflects such updated information.

As detailed in Chapter 3, *Environmental Analysis*, no concerns related to wildfire were received during the EIR scoping period.

3.18.1 Regulatory Framework

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National Cohesive Wildfire Management Strategy

In the Federal Land Assistance, Management, and Enhancement Act of 2009 (FLAME Act), Congress mandated the development of a National Cohesive Wildland Fire Management Strategy for all lands in the United States. Wildfire management is guided by the National Cohesive Wildland Fire Management Strategy, which has three primary goals—resilient landscapes, fire-adapted communities, and safe and effective wildfire response (DOI and USDA 2014). These three goals enable land managers to manage vegetation and fuels; protect homes, communities, and other values at risk; manage human-caused ignitions; and effectively and efficiently respond to wildfires. California is part of the Western Regional Strategy Committee, chartered to support and facilitate the implementation of the National Cohesive Wildland Fire Strategy.

National Fire Protection Association Standards

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute (ANSI). NFPA standards are recommended (advisory) guidelines for fire protection that are referenced in the California Fire Code (CFC). Specific standards applicable to wildfire hazards include, but are not limited to:

WILDFIRE

- NFPA 1141, Fire Protection Infrastructure for Land Development in Wildlands
- NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting
- NFPA 1143, Wildland Fire Management
- NFPA 1144, Reducing Structure Ignition Hazards from Wildland Fire
- NFPA 1710, Standard for the Organization and Deployment of Fire-Suppression Operations, Emergency Medical Operations

STATE

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's privately owned wildlands. CAL FIRE provides fire assessment and firefighting services for land in State Responsibility Areas (SRAs), responds to an average of 550,000 emergencies each year, conducts educational and training programs, provides fire planning guidance and mapping, and reviews general plan safety elements to ensure compliance with State fire safety requirements. CAL FIRE staff, or a designee, also review building permit applications, parcel maps, and use permits for construction or development in SRAs and Local Responsibility Areas (LRAs).

The Board of Forestry and Fire Protection is a government-appointed approval body within CAL FIRE. It is responsible for developing general forest policy, determining the guidance policies of CAL FIRE, and representing the State's interest in federal forestland in California. The Board of Forestry and Fire Protection also promulgates regulations and approves general plan safety elements that are adopted by local governments for compliance with State statutes.

The California Office of the State Fire Marshal supports the mission of CAL FIRE by focusing on fire prevention. These responsibilities include regulating buildings in which people live, congregate, or are confined; controlling substances and products that may, in and of themselves or by their misuse, cause injuries, death, and destruction by fire; providing statewide direction for fire prevention within wildland areas; regulating hazardous liquid pipelines; developing and renewing regulations and building standards; and providing training and education in fire protection methods and responsibilities. These are accomplished through major programs, including engineering, education, enforcement, and support from the Board of Forestry and Fire Protection.

Together, the Board of Forestry and Fire Protection, Office of State Fire Marshal, and CAL FIRE protect and enhance the forest resources of all wildland areas of California that are not under federal jurisdiction.

Fire Hazard Severity Zones and Responsibility Areas

CAL FIRE designates Fire Hazard Severity Zones (FHSZ), as authorized under California Government Code Sections 51175 et seq. FHSZs may be designated Very High, High, or Moderate. CAL FIRE considers many factors when designating FHSZs, including fire history, existing and potential vegetation fuel, flame length, blowing embers, terrain, and weather patterns for the area. CAL FIRE designates FHSZs in two types of areas depending on which level of government is financially responsible for fire protection.

- **Local Responsibility Area.** Incorporated communities are financially responsible for wildfire protection.
- **State Responsibility Area.** CAL FIRE and contracted counties are financially responsible for wildfire protection.

CAL FIRE Strategic Fire Plan

The 2024 *CAL FIRE Strategic Plan* contains goals and objectives to prepare for and mitigate the effects of fire on California’s natural and built environment (CAL FIRE 2024a). The 2024 Strategic Plan focuses on strengthening the department’s capabilities to provide effective fire prevention and suppression activities statewide to protect lives, property, and ecosystems. A key component of the 2024 Strategic Plan is the collaboration within the department to ensure fire suppression and natural resource management is successful (CAL FIRE 2024a).

California Code of Regulations Sections 1270-1276

CCR Sections 1270-1276, also known as the California Fire Safe Regulations, establish minimum wildfire protection standards in conjunction with building, construction, and development in the SRA, and, as of July 1, 2021, the Very High FHSZs.

California Code of Regulations Section 1299.02

California Code of Regulations (CCR) Section 1299.02, also known as the Fire Hazard Reduction Act, defines defensible space as the buffer landowners are required to create on their property between a “Building or Structure” and the plants, brush, and trees or other items surrounding the “Building or Structure” that could ignite in the event of a fire. A building or structure is defined as anything constructed that is designed or intended for support, enclosure, shelter, or protection of persons, animals, or property, having a permanent roof that is supported by walls or posts that connect to, or rest on the ground.

Public Resources Code Section 4291

Public Resources Code (PRC) Section 4291, *Mountainous, Forest-, Brush-, and Grass-Covered Lands*, is intended for any person who owns, leases, controls, operates, or maintains a building or structure in a mountainous area, forest-covered lands, shrub-covered lands, grass-covered

WILDFIRE

lands, or land that is covered with flammable material, regardless of whether the property is in an SRA or Very High FHSZ. This section requires defensible space to be maintained within 100 feet from each side of a structure. An ember-resistant zone is required within 5 feet of a structure and more intense fuel reduction is required between 5 and 30 feet of a structure.

California Building Standards Code

The California Buildings Standards Code (CCR Title 24) establishes statewide standards for building design, construction, and fire safety and is updated on a three-year cycle. Title 24 consists of multiple parts that collectively govern building construction and safety requirements throughout California. The building standards are effective statewide; however, local jurisdictions may adopt more restrictive standards based on local climatic, geological, or topographical conditions in accordance with amendment procedures prescribed by the California Building Standards Commission. Commercial and residential buildings are plan-checked by local building officials for compliance with Title 24 and any locally adopted amendments.

California Building Code

The California Building Code (CBC), Part 2 of CCR Title 24, establishes general building design and fire safety standards applicable statewide. Typical fire safety requirements include, but are not limited to, installation of sprinkler systems; fire-resistance standards for building materials and construction assemblies; smoke-detection and alarm systems; means of egress requirements; and clearance of combustible debris and materials. Local jurisdictions may adopt more restrictive CBC provisions based on local conditions, subject to State findings and adoption procedures.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. The CFC is codified in CCR Title 24, Part 9 and is revised and published every three years by the California Building Standards Commission. The CFC is effective statewide; however, a local jurisdiction may adopt more restrictive standards based on local conditions.

The CFC regulates minimum fire safety regulations for new and existing buildings and facilities, including emergency planning and preparedness, fire service features, fire protection systems, hazardous materials management, fire-flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in high-rise buildings; fire-resistance standards for building materials and construction assemblies; and clearance of combustible debris and vegetation within prescribed distances of occupied structures in wildfire hazard areas.

The CFC also establishes fire safety requirements for construction and demolition activities. The purpose of this chapter is to provide reasonable safety to life and property from fire during construction and demolition operations, including those in underground locations.

Requirements include restrictions on smoking, management of combustible materials and debris, controls on cutting and welding operations, electrical wiring safety, and cooking activities. Additional provisions require preparation of site safety plans prior to building permit issuance, provision of fire watch during nonworking hours, and maintenance of water supply for fire protection once combustible materials are present on a project site.

California Wildland-Urban Interface Code

Prior to the 2025 code cycle, ignition-resistant construction standards for buildings in FHSZs and Wildland-Urban Interface (WUI) areas were primarily addressed in Chapter 7A of the CBC and Chapter 49 of the CFC. Effective January 1, 2026, these wildfire-related building and site design requirements are consolidated into the 2025 California Wildland-Urban Interface Code (CWUIC), Part 7 of CCR Title 24. The CWUIC supersedes the separate wildfire construction and WUI provisions formerly contained in CBC Chapter 7A and CFC Chapter 49.

The CWUIC establishes statewide standards for development in designated FHSZ/WUI areas, including requirements for ignition-resistant construction materials and methods for exterior wildfire exposure (e.g., roofing, vents, exterior walls, windows and glazing, exterior doors, decks, and appendages), protection of underfloor areas and projections, and standards for ancillary structures. The CWUIC also includes provisions related to site access and emergency access, water supply for fire protection, fire protection planning, and long-term vegetation management.

In addition, “Zone 0” regulations, which require an ember-resistant zone of noncombustible materials within the first five feet of structures in designated FHSZ/WUI areas, are being incorporated into Title 24 and related State regulations to further reduce structure ignition risk from radiant heat and ember intrusion. New development and substantial improvements within WUI/FHSZ areas are required to comply with the CWUIC, including ignition-resistant construction standards, emergency access and water supply provisions, defensible space and vegetation management requirements, and applicable fire protection planning measures. Projects would be required to comply with the building and fire codes in effect at the time of discretionary approval and building permit issuance, including any locally adopted amendments to the CWUIC.

Vegetation management and defensible space requirements applicable to development in WUI/FHSZ areas are implemented in coordination with the Fire Safe Regulations and related provisions of the Public Resources Code (e.g., PRC Section 4291) and implementing regulations of CAL FIRE, as applicable.

WILDFIRE

California Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards due to overhead power lines and nearby aerial communication facilities. The CPUC published a Fire Threat Map under Rulemaking 15-05-006 following procedures in Decision 17-01-009, revised by Decision 17-06-024, which adopted a work plan for the development of a utility High Fire Threat District where enhanced fire safety regulations in Decision 17-12-024 apply (CPUC 2025). The fire regulations require electric utilities to comply with the following:

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in Tier 2 (elevated fire threat) areas on the CPUC High Fire-Threat District within 12 months, and in Tier 3 (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines within the High Fire Threat District.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the High Fire Threat District. (CPUC 2017)

Fire Hazard Technical Advisory

The Governor's Office Land Use and Climate Innovation (LCI) published the Fire Hazard Technical Advisory in 2015 and revised it in 2022 as a planning guide for addressing fire hazards, reducing risk, and increasing resilience across California's diverse communities and landscapes. The Fire Hazard Technical Advisory provides a range of goals, policies, and programs for fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery. The 2022 update includes specific land use strategies to reduce fire risk to buildings, infrastructure, and communities.

California Environmental Quality Act

In November 2022, the California Attorney General issued the *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act*. This guidance document was designed to help lead agencies comply with CEQA (PRC Section 21000 et seq.) when considering whether to approve projects in wildfire-prone areas. This guidance provides suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation. The guidance is aimed at proposed development projects, such as residential, industrial, or commercial developments. The extent to which it applies varies by project based

on project design and location. It does not impose additional requirements on local governments or alter any applicable laws or regulations but is intended to provide guidance on some of the issues, alternatives, and mitigation measures that should be considered during the environmental review process.

REGIONAL

Tri-Valley Local Hazard Mitigation Plan

The purpose of hazard mitigation planning is to reduce the loss of life and property by minimizing the impact of disasters. The *Tri-Valley Local Hazard Mitigation Plan* (LHMP) was adopted in March 2024 for the purpose of identifying, assessing, and reducing the long-term risk to life and property from hazard events (City of Livermore 2024). The LHMP includes an assessment of hazards and vulnerabilities and a set of mitigation actions for the Tri-Valley area, including the EIR Study Area. In the context of an LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. The LHMP must be reviewed and approved by the Federal Emergency Management Agency (FEMA) every five years to maintain eligibility for disaster-relief funding. As part of this process, the California Governor's Office of Emergency Services reviews all local hazard mitigation plans in accordance with the Disaster Mitigation Act of 2000 regulations, and coordinates with local jurisdictions to ensure compliance with FEMA's Local Mitigation Plan Review Guide. The mitigation strategies in this plan related to wildfire include updating the Livermore Development Code (LDC) to require new development to consider natural hazards, including WUI areas into the City's geographic information system (GIS), overhead utility landscaping, an annual weed abatement program, and retrofitting existing structures in high hazard areas.

Alameda County Community Wildfire Protection Plan

The Alameda County Community Wildfire Protection Plan (CWPP), adopted in 2025, is a product of the Diablo Firesafe Council in coordination with the Alameda County Association of Fire Chiefs, Hills Emergency Forum, and Stakeholder Committee Members (Diablo Firesafe Council 2025). The CWPP reflects community input on actions and projects that assists residents and first responders in their efforts to protect lives, property, and the environment. The CWPP outlines the updated guidelines developed by the California Fire Safe Council, provides an overview of fire hazard risks in the WUI, and treatment for structural ignitability.

WILDFIRE

LOCAL

Livermore Municipal Code

The Livermore Municipal Code (LMC) includes various directives to minimize adverse impacts to wildfire. The LMC is organized by title, chapter, section, and, in some cases, articles. Most provisions related to wildfire are in Title 13, *Public Services*; Title 15, *Buildings and Construction*; and Title 16, *Environment*, as follows:

- **Chapter 13.48, *Underground Utility Facilities***, allows the City Council to designate areas for the removal of poles, overhead wires, and associated overhead structures, and the installation of wires and facilities for supplying electric, communication, or similar services underground.
- **Chapter 15.02, *Building Code***, adopts the International Building Code, as amended, and set forth in the California Building Standards Code, CCR Title 24.
- **Chapter 15.06, *Fire Code***, adopts the International Fire Code, as amended, and set forth in the CFC, CCR Title 24, Part 9.
- **Chapter 16.12, *Flood Control Regulations***, aims to minimize public and private losses from flooding in Livermore, including restricting uses in areas prone to flooding or erosion, requiring such uses to be protected against flood damage, controlling the alteration of natural floodplains, and controlling filling or dredging that may increase flood hazards.

Livermore Development Code

The City of Livermore regulates land use and design through the LDC, an alternative approach to zoning that reinforces walkable, sustainable mixed-use environments and development, and builds on community character. The LDC provides development standards similar to typical zoning ordinances, such as heights, setbacks, and site regulations for all zones. LDC Chapter 4.02.080, *Grading Activities*, regulates the filling, movement, excavation, or removal of materials for construction activities to ensure slope stability and requires City-approved permits for these activities.

Livermore Emergency Operations Plan

The Livermore Emergency Management Division is responsible for coordinating agency response to disasters or other large-scale emergencies. The Livermore Emergency Operations Plan (EOP) establishes policy direction for emergency planning, mitigation, response, and recovery activities in the county (City of Livermore 2018). The EOP addresses interagency coordination, procedures to maintain communications with regional and State emergency response teams, and methods to assess the extent of damage and management of volunteers, as well as identifies the location of Emergency Operations Centers. The EOP uses the Standardized Emergency Management System, as required by California Government Code

Section 8607(a) for managing responses to multiagency and multi-jurisdictional emergencies in California, including those related to wildfires.

Livermore Climate Action Plan

The Livermore Climate Action Plan (CAP), adopted in 2022, is the City’s long-term plan to reduce greenhouse gas emissions and adapt to climate-related hazards. The CAP process included a Climate Vulnerability Assessment identifying the populations and community assets most vulnerable to climate change hazards, including wildfire. The adaptation strategies in the plan related to wildfire include creating fire-safe landscaping standards, facilitating building retrofits to improve indoor air quality, continuing to implement the fire fuel-load reduction programs, continuing to conduct outreach of fire prevention, operating clean air centers, and encouraging the use of AC Alert emergency notification system.

3.18.2 Existing Conditions

WILDFIRE BACKGROUND

The term “wildfire” refers to fires that usually result from the ignition of dry grass, brush, or timber. Historically, wildfires commonly occurred in steep or heavily vegetated areas, away from developed areas. More recently, wildfires have been encroaching into more urban areas, or the WUI, threatening homes, businesses, and essential infrastructure. Though wildfires play an important role in the ecology of many natural habitats, risks to human safety and property increase as urban development moves into areas susceptible to wildfire hazards.

Types of Wildfires

There are three basic types of wildfires:

- **Crown fires** burn trees to their tops and are the most intense and dangerous wildland fires.
- **Surface fires** burn surface litter and duff and are known for being the easiest fires to extinguish and causing the least damage. Brush and small trees enable surface fires to reach treetops, so are referred to as *ladder fuels* (Natural Resources Canada 2021).
- **Underground fires** occur belowground in deep accumulations of dead vegetation. These fires move very slowly and can be difficult to extinguish due to limited access (Western Fire Chiefs Association 2024).

Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral and sage scrub), and grassland. Many species of native California plants are adapted to fire, and habitats such as woodlands, chaparral, and grasslands can recover from fire. Between 2020 and 2025, an average of 856,923 acres burned per year throughout California (CAL FIRE 2025). Wildfires in California have been more frequent and growing in intensity over the past several

WILDFIRE

years, with 4,304,379 acres burning in 2020 and 2,569,386 acres burning in 2021 (CAL FIRE 2024b).

Wildfire Causes

Although the term *wildfire* suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires, accounting for 44 percent of acreage burned (City of Livermore 2022). The three most common types of causes of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.); arson; and equipment use.¹ Lightning is the major natural cause of wildfire in the United States, with more than 40 percent of wildfires in the western United States caused by lightning between 1992 and 2015 (Balch et al. 2017; Cart 2023).

Power lines can ignite wildfires in several ways, including:

- **Downed lines.** Downed power lines can produce arcing that can cause the power lines to spark and ignite vegetation.
- **Vegetation contact.** A branch contacting two conductors for a sufficient duration may ignite the branch; a tree falling on a line can cause a downed line.
- **High winds and severe weather.** Conductors can slap together during high winds and severe weather, creating arcing of the power lines and ejecting hot metal particles that can ignite flammable matter on the ground.
- **Equipment failures.** As circuit components deteriorate, they can arc and spark and thus ignite nearby flammable matter. (Texas Wildfire Mitigation Project 2014)

An analysis of United States Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires were within 0.5 miles of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires were within approximately 650 feet (200 meters) of a road (Pacific Biodiversity Institute 2007). The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters.

Wildfires ignite structures in three ways: embers landing on the structure or flammable material next to the structure, direct flame contact, and radiant heat from fires close to the structure. Embers are the most common cause of home ignition. Embers ignite structures by entering through attic vents, igniting flammable materials around the home (litter in the roof gutter; wood stacks; or wood fencing), or finding their way under roofing materials (California Chaparral Institute 2025).

¹ Miscellaneous human activities (unspecified) are ranked above equipment use in percentage of wildfires caused.

CAL FIRE estimated in 2017 that there were about three million housing units in California in FHSZs and potentially at risk from wildland fire: that is, just over 20 percent of the total housing units in the state (CAL FIRE 2018). A study conducted by the *Los Angeles Times* indicates that an additional 2.8 million Californians were added to the FHSZs due to the recent updates of the FHSZ maps in both the SRA and LRA (Los Angeles Times 2025). According to CAL FIRE data, approximately 95 percent of structures seriously damaged in California wildfires from 2013 to 2020 took place in FHSZs in the SRA or LRA or on federal lands (CapRadio 2021).

Wildland-Urban Interface

The WUI is any area where structures and other human developments meet or intermingle with wildland vegetative fuels—shrubs, trees, and grasses. Developments in the WUI exacerbate fire occurrence and fire spread in several ways:

- Increased numbers of people near and in wildland areas, creating more frequent human-caused wildfires.
- Wildfires become harder to fight due to simultaneous evacuation and firefighting resources diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to buildup of fuel in brush areas and overgrowth of grasslands, increasing wildfire hazard further (Radeloff et al. 2018).

Secondary Effects of Wildfires

Secondary effects of wildfire include additional hazards, such as landslides, poor air quality, and power outages. This section describes potential secondary hazards.

Post-Fire Debris Flows

Post-fire landslide hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high-intensity rainfall events. Post-fire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles.

Fires increase the potential for debris flows in two ways:

- Fires may bake soil into a hard crust that repels water.
- Fires destroy vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil. (Oregon Water Science Center 2018)

WILDFIRE

Post-fire debris flows are most common in the two years after a fire and are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas. As little as 0.3 inches of rainfall in 30 minutes has triggered debris flows, and any storm that has intensities greater than about 0.4 inches per hour can produce debris flows (California Water Science Center 2018).

Air Quality

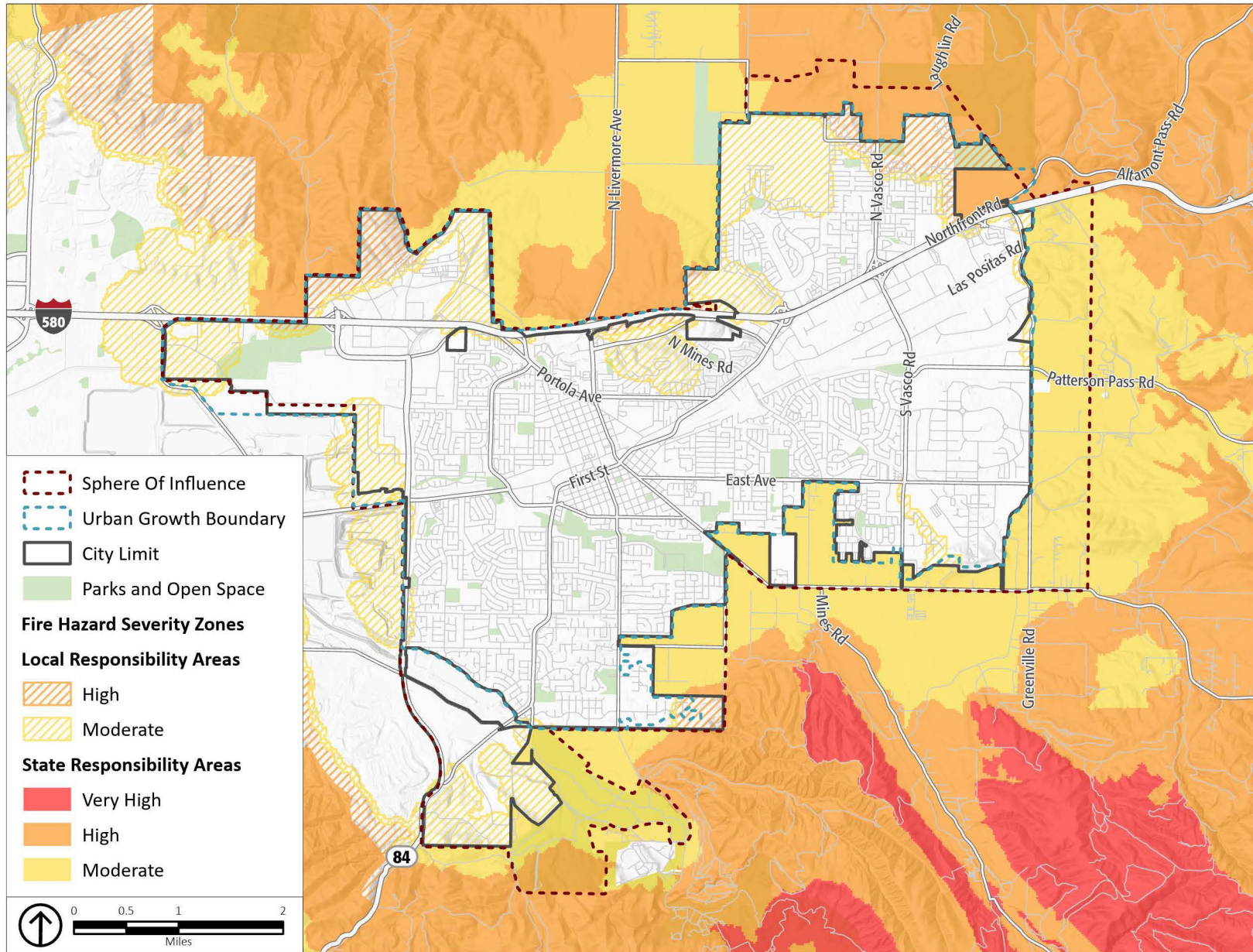
Regionally, smoke from wildfires creates poor air quality that can last for days or weeks, depending on the scale of the wildfire and wind patterns. Smoke itself is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. Health risks from smoke inhalation are largely from microscopic particles (PM_{2.5}) that can penetrate the lungs and cause a range of health problems, including chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. There are some populations that are more sensitive than others to smoke—for instance, people with heart or lung diseases, older adults, children, people with diabetes, people with compromised immune systems, and pregnant women (USEPA 2025). Through observations of wildfires, experts have determined that the large plumes of smoke from large wildfires can result in that smoke and ash being carried thousands of miles from the burn area of the wildfire.

Other Secondary Effects

In addition to damaging natural environments, wildfires also deplete water reserves, down power lines, disrupt communication services, and block evacuation routes, which can isolate neighborhoods. In some cases, electric power companies shut off power lines to prevent wildfires, also known as Public Safety Power Shutoffs, causing outages that can last for hour or days depending on the weather severity. Wildfires can indirectly cause flooding if flood-control facilities become inadequate to handle increases in stormwater runoff, sediment, and debris that are likely to be generated from burn scars.

WILDFIRE IN THE EIR STUDY AREA

The geography, weather patterns, and vegetation in the EIR Study Area and surrounding areas provide ideal conditions for recurring wildfires. As shown in Figure 3.18-1, *Fire Hazard Severity Zones*, the EIR Study Area does not contain lands within a Very High FHSZ but it does contain lands within Moderate and High FHSZ in both the LRA and the SRA. These zones are concentrated in the northern portion of the EIR Study Area, north of Livermore Municipal Airport and Interstate 580 (I-580), as well as the southern portion of the EIR Study Area adjacent to unincorporated Alameda County lands. There are portions to the east of the City Limit within the Sphere of Influence that are within a moderate SRA and portions of the EIR Study Area to the northwest that are within a moderate LRA.



Source: City of Livermore, 2022; California Department of Forestry and Fire Protection, 2025.

Figure 3.18-1
Fire Hazard Severity Zones

WILDFIRE

WUI areas occur when urban development is intermixed with wildland vegetation, or when pockets of wildland vegetation occur inside developed areas. Unlike wildfire in wildland areas, fires in WUI areas are more likely to damage or destroy buildings and infrastructure that support populations, the economy, and key services. Some of the WUI areas in the EIR Study Area have few access roads, which poses challenges for evacuation and for emergency responders to fight fires and help residents in these areas.

Wildfire History

CAL FIRE maintains a list of historic fires throughout the state. According to CAL FIRE, the City of Livermore has experienced one wildfire in the City Limit and several others in nearby areas. The 1979 Dry Creek Fire occurred within the City Limit and burned approximately 676 acres. The cause of the fire remains unknown. Several other historic wildfires have occurred in nearby areas outside the EIR Study Area, including the 2020 SCU Lightning Complex Fire, the 1996 Pleasanton Fire, the 1999 Car Fire, and the 1961 Bailey Fire. Figure 3.18-2, *Historic Wildfires In or Near Livermore*, shows the historic wildfire perimeters between 1960 and 2025.

Factors Influencing Wildfire

Several factors influence wildfire conditions and facilitate the spread of wildfires, including weather conditions, fuels, topography, human action, and climate change.

Weather

The climate in the EIR Study Area is generally referred to as “Mediterranean,” with hot, dry summers and cool, wet winters. Warm summers and cold winters with rainfall are common in the EIR Study Area. Rainfall typically occurs during the winter months due to storm fronts that move inland from the Pacific Ocean or south from Northern California. The EIR Study Area receives an average of approximately 16.2 inches of precipitation annually (Cal-Adapt 2025a). Because the summer months are generally hot and dry, the risk of wildfires has historically been greatest in summer and fall. Relative humidity is also an important fire-related weather factor. As humidity levels drop, the dry air causes vegetation moisture levels to decrease, thereby increasing the likelihood that plant material will readily ignite and burn; the risk of wildfire increases when lightning strikes occur during dry periods.

Wind is a primary weather factor in wildfire behavior. Average wind speeds in the EIR Study Area vary only slightly throughout the year. The windier part of the year from April to September has average wind speeds of 7.9 miles per hour, and the calmer part of the year from September to April has average wind speeds of 6.2 miles per hour (Weatherspark 2025). Wind is most commonly coming from the west from February to November, with winds from the north from November to February (Weatherspark 2025). Diablo winds, which are a type of downslope, warm, northerly to northeasterly wind, flow over the Diablo Mountain range and have had reported speeds of up to 100 miles per hour (Liu et al. 2020). As wind speeds increase,

the rate of fire spread, intensity, and ember spread potential also increases. Gusty and erratic wind conditions can cause wildfire to spread irregularly, making it difficult to predict its path and effectively deploy fire-suppression forces. Winds from the northeast in the late summer and fall compound with lower relative humidity, creating “red flag” conditions.² Diablo winds and low humidity are especially dangerous because low humidity can dry out trees and other fuel that may also be weakened by the winds. This can increase wildfire conditions in the EIR Study Area. Wind shifts can also occur suddenly due to temperature changes and interactions with slopes or hillsides, causing fires to spread unpredictably.

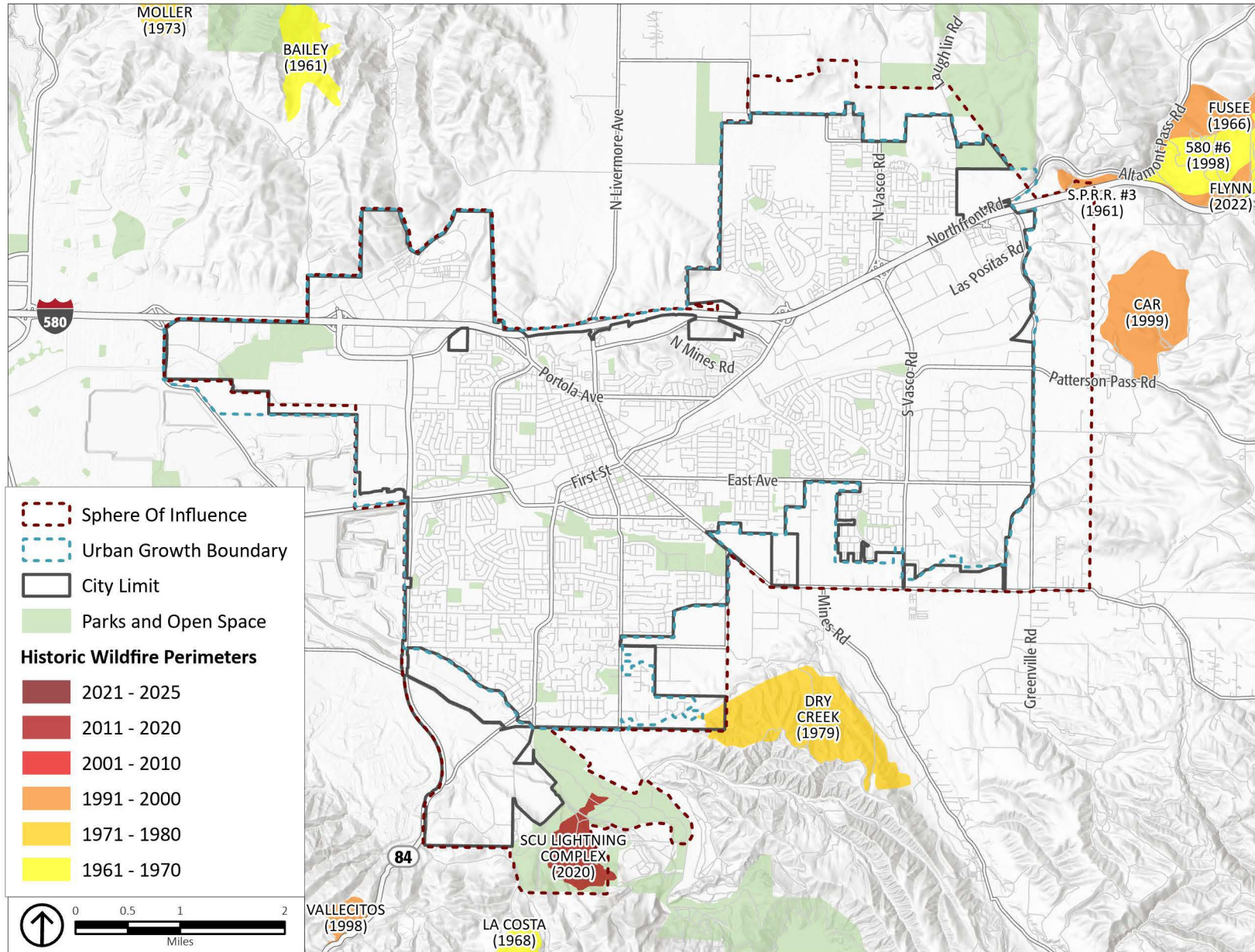
Fuel

The undeveloped lands within and surrounding the EIR Study Area are covered by natural vegetation and agricultural lands, which provide fuels such as grass and brush for wildfires. Each type of vegetation contributes to fire hazard severity to varying degrees. The qualities of vegetation that directly influence fire risk include fuel type and size, loading, arrangement, chemical composition, and dead and live fuel moisture, which contributes to the flammability characteristics of the vegetation. As described in Section 3.4, *Biological Resources*, landcover in the EIR Study Area consists of urban development areas, including residential, suburban, ruderal, ornamental woodland, and urban lands, agricultural lands with cropland, developed agriculture, orchard, and vineyard, and natural vegetation consisting of grasslands, scrub habitat, and oak woodlands. Grass, brush, and woodland fuel types react quickly to changes in weather such as low humidity or high wind speeds. Fires in areas covered by this vegetation type can spread quickly in gusty wind conditions.

Topography

Slope is a measure of land steepness; wildfire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. For example, as slope increases from 20 to 40 percent, flame heights can double, and rates of fire spread can increase fourfold. The topography in the EIR Study Area is generally flat due to its location in the Livermore Valley, with hills along the northern, southern, and eastern edges. These areas would also be more susceptible to debris flow after a fire.

² The National Weather Service issues “red flag” weather day warnings when certain weather elements such as low relative humidity and strong winds could lead to increased wildfire risk.



Source: City of Livermore, 2022; California Department of Forestry and Fire Protection, 2025.

Figure 3.18-2
Historic Wildfires In or Near Livermore

Human Actions

Most wildfires are ignited by human action, the result of direct acts of arson, carelessness, or accidents. Many fires originate in populated areas along roads and around homes and are often the result of careless disposal of cigarettes, mowing dead grass, electrical equipment malfunction, equipment use, or burning debris. Recreation areas with increased human activity that are in high or very high fire hazard areas also increase the potential for wildfires.

Climate Change

Climate change is likely to increase annual average maximum temperatures in the EIR Study Area from a historical 72.6 degrees Fahrenheit (°F) to 77.3°F by 2050 and 80.4°F by 2100 (Cal-Adapt 2025a). This will likely create warmer temperatures earlier and later in the year. Precipitation levels are projected to increase slightly over the course of the century, changing from a historical annual average of 16.2 inches per year to an annual average of 17.3 inches by 2050 and an annual average of 18.9 inches by 2100 (Cal-Adapt 2025a). Variations in precipitation patterns will also lead to an increase in frequency and intensity of heavy precipitation events as well as prolonged periods of drought. The combination of extreme heat and droughts can cause soil and vegetation to dry out, creating more fuel for wildfires. These factors are expected to increase wildfire conditions, creating the risk of more frequent and intense wildfires. Because wildfires burn the vegetation that helps stabilize hillsides and absorb water, more areas burned by fire may also lead to an increase in landslides and floods. Historically, an average of 355 acres burned annually in the EIR Study Area (Cal-Adapt 2025b). Wildfires are projected to decrease to an annual average in the city of 292 acres burned annually by 2050 and an annual average of 209 acres burned annually by 2100 (Cal-Adapt 2025b).

FIRE PROTECTION RESOURCES

Fire services are provided by the Livermore-Pleasanton Fire Department (LPPFD). In 1996, the Cities of Livermore and Pleasanton entered into a Joint-Powers Authority agreement, consolidating each City's fire department into the LPPFD. The LPPFD provides contract and automatic aid outside the cities of Livermore and Pleasanton within Alameda County and adjacent areas. The LPPFD provides core services to approximately 89,000 Livermore residents over an area of 26 square miles. These services include all-risk emergency response, such as fire, emergency medical services, automobile accidents, hazardous materials, and county and statewide mutual aid. Additionally, LPPFD provides mandated emergency readiness training, fire prevention plan checks and inspections, community education, and disaster preparedness. The LPPFD also supports law enforcement to implement evacuation orders. LPPFD has worked to adopt AC Alert and Genasys Protect (formally Zonehaven AWARE), a community emergency and evacuation interface tool, to facilitate successful emergency preparation and evacuation (LPPFD 2025b).

WILDFIRE

The LPPD is organized into three branches: Administration, Fire Prevention, and Emergency Operations. The Fire Prevention branch focuses on risk reduction to the community through a performance-based approach and application of the codes and laws pertaining to fire, hazardous materials, and use of buildings and facilities. The Emergency Operation team prepares for, responds to, and provides all services related to emergency fire suppression; emergency medical service; traffic collisions; specialized rescue; and emergency hazardous materials response and property losses (i.e., water leaks, fallen trees, and downed wires). Additionally, Emergency Operations also conducts fire safety inspections for businesses and conducts public education outreach.

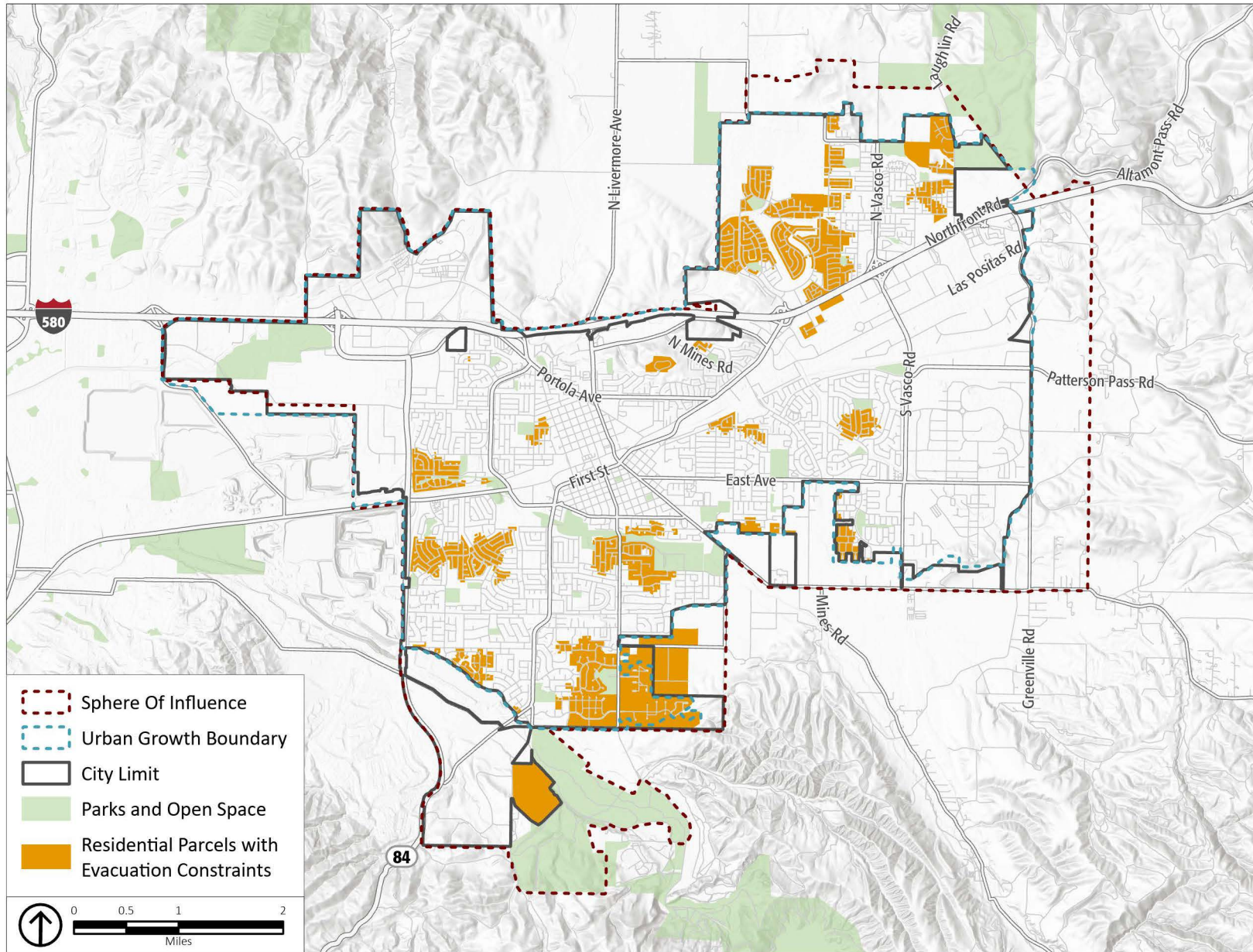
LPPD has 128 full-time-equivalent employees and four half-time employees, is headquartered in Pleasanton at 3560 Nevada Street, and operates and maintains five fire stations in the EIR Study Area (LPPD 2025a). Additional details about fire protection services are provided in Section 3.15, *Public Services, Parks, and Recreation*.

EVACUATION AND ACCESS

Evacuation routes are designated roadways that allow many people to quickly leave an area due to a potential or imminent disaster. These routes should have sufficient capacity to accommodate the needs of the community, be safely and easily accessible, and allow people to travel far enough away to be safe from emergency conditions.

The City has several evacuation routes crossing the EIR Study Area. The primary evacuation route that has capacity to transport the largest number of vehicles is I-580. Smaller potential routes include Holmes Street/Vallecitos Road, Concannon Boulevard, First Street, East Avenue, Vasco Road, Las Positas Road, Murrieta Boulevard, Railroad Avenue/Stanley Boulevard, Portola Avenue, East Airway Boulevard, and Livermore Avenue/Tesla Road. During emergencies, the LPPD coordinates evacuations warnings and orders. Evacuations are also coordinated through the Alameda County AC Alerts and Genasys Protect.

Several neighborhoods in the EIR Study Area have evacuation constraints. Figure 3.18-3, *Evacuation-Constrained Residential Areas*, shows identified evacuation-constrained residential areas throughout the EIR Study Area, some of which are in fire hazard severity zones pursuant to California Government Code Section 65302(g)(5). Evacuation-constrained residential areas are north of I-580 in the northeast portion of the EIR Study Area, scattered neighborhoods throughout the central portion of the EIR Study Area, and generally south of Stanley Boulevard, College Avenue, and East Avenue.



Source: City of Livermore, 2022.

Figure 3.18-3
Evacuation Constrained Residential Areas

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3.18.3 Standards for Analysis

SIGNIFICANCE CRITERIA

Appendix G, *Environmental Checklist Form*, of the CEQA Guidelines states that the proposed Project would result in a significant impact related to wildfire if located in or near an SRA or lands classified as Very High FHSZs, and would:

- a) Substantially impair an adopted emergency response plan or emergency evacuation plan.
- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

While much of the EIR Study Area is not in or near an SRA or lands classified as Very High FHSZs, because the EIR Study Area borders an SRA and lands classified as Very High FHSZs to the south of the City Limit as shown on Figure 3.18.1, the CEQA Guidelines standards for analysis are discussed in the following criteria sections (a) through (d).

3.18.4 Project Impact Analysis

a) **Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?**

Less than significant. Adopted emergency response plans and emergency evacuation plans include those discussed under Section 3.18.1, *Regulatory Framework*, such as the Livermore EOP and the Tri-Valley LHMP.

Future development would be required to comply with adopted local, regional, and State plans and regulations addressing emergency access, response, and evacuation, including the CBC, CFC, and LMC. The CBC and CFC regulate emergency access road design, establishing minimum unobstructed width, vertical clearance, and turning radii standards. Similarly, the LMC establishes local standards for roadway design, emergency vehicle access, and fuel management. Future development would be reviewed by the LPPD for compliance with applicable fire protection requirements. Compliance with these regulations would ensure that

future development can be adequately served by emergency response systems operating under the City's EOP and the Tri-Valley LHMP.

During construction, projects would be required to comply with applicable regulations regarding circulation. For example, depending on the location and size of a future development project, as determined by the City and LPFD, larger projects could be required to prepare and implement a construction traffic control/traffic management plan to ensure adequate traffic flow and to keep key routes open during construction. In addition, individual projects would be required to pay all applicable local and regional transportation impact fees to fund the construction of planned roadway improvements in the area as determined at the time of application. Review and approval of temporary lane closures, if needed, would ensure there would be no conflicts with an adopted emergency response plan or emergency evacuation plan during construction. Furthermore, the Safety (S) Element, and Mobility (M) Element of the proposed General Plan 2045 contain the following goals and policies that are designed to minimize impacts related to evacuation and emergency response:

- **Goal S-1:** Strengthen community preparedness, response, and resilience to hazards.
 - **Policy S-1.1: Integrated Emergency Planning and Coordination.** Regularly update, test, and incorporate the adopted *Tri-Valley Local Hazard Mitigation Plan* into this Safety Element by reference, as permitted by California Government Code Section 65302.6. Coordinate with regional partners and conduct periodic mock exercises to ensure effective emergency preparedness and response.
 - **Policy S-1.2: Emergency Communications and Alerts.** Expand and maintain reliable emergency communication systems that provide timely warnings and updates. Ensure communications are accessible to people in multiple languages and formats, and for people with access and functional needs. Participate in regional and State emergency alert systems as appropriate.
 - **Policy S-1.3: Evacuation Route Management.** Maintain and improve designated evacuation routes within the city, including roadway repairs and vegetation management. Coordinate with regional transportation agencies to ensure the safety and integrity of State-owned evacuation routes, such as Interstate 580 and State Route 84.
 - **Policy S-1.6: Community Emergency Response Team.** Continue to support and expand the Livermore-Pleasanton Community Emergency Response Team (CERT) to strengthen the City's volunteer emergency response capacity and community resilience.
 - **Policy S-1.7: Community Education and Preparedness.** Improve public safety through education, outreach, and training programs that engage residents, businesses, and community groups, especially those with access and functional needs. Activities may include emergency drills, first-aid training, hazard retrofits, and encouraging residents to maintain emergency supplies. Provide clear information on hazard risks and encourage participation in emergency alert systems.

WILDFIRE

- **Goal MO-5:** Provide a local circulation system that supports the reliable and efficient movement of people and goods while balancing safety with acceptable levels of service.
 - **Policy MO-5.14: Roadway Linkages.** Construct missing roadway links to complete the roadway system designated in the Mobility Element when warranted by roadway operating conditions.

Specifically, proposed Policy S-1.2 would require the expansion and maintenance of reliable emergency communication systems that provide timely warnings and updates, which would help facilitate evacuation in case of emergency. Proposed Policy S-1.3 would require the City to maintain and improve designated evacuation routes and coordinate with regional transportation agencies to ensure the safety and integrity of State-owned evacuation routes. Proposed Actions S-A-1.2 through S-A-1.4 would further support these policies by working with other agencies to increase access to and participation in emergency response systems, conducting an evaluation study to identify evacuation routes and constraints, and coordinating with transit providers to develop evacuation plans for those with special access or functional needs.

Future development would be required to comply with adopted State, regional, and local plans and regulations addressing emergency access, response, and evacuation, including the proposed General Plan 2045 goals and policies previously identified. As such, implementation of the proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Therefore, impacts would be **less than significant**.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant.

Slope

As discussed in Section 3.18.2, *Existing Conditions*, the topography of the EIR Study Area is generally flat with hills in the northern, eastern, and southern portions of the EIR Study Area that coincide with Moderate and High FHSZs. Construction of future development in these areas may require some grading and site preparation activities. Most future development would occur in the flatter portions of the EIR Study Area in infill locations. The ABAG/MTC Isabel Avenue/Bay Area Rapid Transit (BART) Station Planning Area Priority Development Area (PDA) is within a Moderate FHSZ in a hillier portion of the EIR Study Area. Therefore, development and redevelopment in the EIR Study Area could occur in areas with slopes.

All future development, including development within FHSZs and WUIs, would be required to comply with the CBC, CFC, CWUIC, LMC, and LDC grading standards, as applicable, which include standards to minimize the spread of wildfire and soil instability due to slopes. The CWUIC establishes requirements for ignition-resistant construction, defensible space, fire apparatus access, and water supply. The LMC includes provisions related to roadway design, emergency access, and vegetation management. The LDC grading standards regulate site design, slope modification, and erosion control measures to reduce soil instability and minimize wildfire risk associated with steep slopes and hazardous topography.

Additionally, the Safety (S) Element of the proposed General Plan 2045 contains the following goals and policies that are designed to minimize impacts from the spread of wildfire:

- **Goal S-2:** Integrate hazard risk, vulnerability information, and climate adaptation into land use planning and development decisions
 - **Policy S-2.1: Hazard Information and Risk Reduction for New Development.** Provide natural and human-made hazard information to project applicants and recommend ways to reduce risks and inform design, siting, or construction measures to reduce risks and protect public health, safety, property, and the environment.
 - **Policy S-2.3: Risk Reduction in Planning.** Incorporate risk reduction considerations in new and updated infrastructure master plans, Capital Improvement Plans, and Specific Plans to reduce the impacts of natural hazards.
- **Goal S-5:** Plan new development with wildland fire hazards in mind.
 - **Policy S-5.2: Fire Hazard Development Review.** Review major land use development proposals in mapped Fire Hazard Severity Zones (Figure S-3 [of the General Plan]) for site design criteria and appropriate preventive and self-protective measures.
 - **Policy S-5.3: Fire Hazard Development Parameters.** Prohibit development in areas where any of the following would be required to substantially reduce fire hazard:
 - a. Major modification of existing landforms
 - b. Significant removal of, or potential damage to, established trees and other vegetation (unless designated for removal by an arborist)
 - c. Exposure of slopes that cannot be suitably revegetated
 - **Policy S-5.4: Wildfire Hazard Area Development Parameters.** Restrict the development of new critical facilities and residential development to outside of Fire Hazard Severity Zones, as shown in Figure S-3 (of the General Plan), to the maximum extent possible. If new critical facilities or residential developments are constructed in these areas, require projects to incorporate fire-safe land use planning and design measures. For critical facilities, these measures shall allow the facility to continue to provide vital services during and after wildfires to the greatest extent feasible.

WILDFIRE

- **Policy S-5.5: Development in Fire Hazard Zones and Enforcing Safety Standards.** Review all proposed development in the Fire Hazard Severity Zones. Require any development in the Fire Hazard Severity Zones to comply with the California Wildland-Urban Interface Code, and to use the best development and site design practices as identified by the Fire Department.
- **Policy S-5.6: Fire Safety Plan.** Require the preparation of a fire safety plan for all new major developments in or sharing a boundary with Fire Hazard Severity Zones, as shown in Figure S-3 (of the General Plan). The fire safety plan shall address site-specific wildfire risk-reduction measures beyond standard building and fire code requirements, such as construction-phase fire prevention, emergency access and evacuation coordination, phasing of fuel management, water supply and fire flow, and coordination with the Livermore-Pleasanton Fire Department.
- **Policy S-5.8: Rebuilding After Wildfire.** Require redevelopment after wildfires to meet current California Building Code, California Fire Code, and California Fire Safe Standards to reduce future vulnerabilities to fire hazards through site preparation, layout design, fire-resistant landscaping, and fire-retarding building design and materials. Regularly re-evaluate development standards to ensure consistency with the latest wildfire regulations and best practices.

Specifically, proposed Policy S-5.3 would prohibit development in areas where exposure of slopes cannot be suitably revegetated to substantially reduce fire hazards. Proposed Policies S-5.5 and S-5.8 would require review of development proposals in FHSZ for site design criteria and appropriate preventative and self-protective measures as well as adherence to the California Fire Safe Regulations and the Fire Hazard Reduction Around Buildings and Structures Regulations.

Prevailing Winds

As discussed in Section 3.18.2, *Existing Conditions*, the EIR Study Area is prone to Diablo winds in the late summer and fall. These winds have high speeds and can shift suddenly, and they are often accompanied by low humidity. They create dangerous conditions for starting and spreading wildfires, and they also spread wildfire smoke hazards, as can prevailing winds.

Section 3.18.1, *Regulatory Framework*, describes plans, policies, regulations, and procedures that help reduce wildfire risks. The CAL FIRE Strategic Fire Plan, Tri-Valley LHMP, Alameda County CWPP, and Livermore EOP are intended to reduce wildfire hazards and coordinate response to these hazards on a statewide and regional scale. The CAL Fire Strategic Fire Plan and Tri-Valley LHMP identify extreme wind events as a primary factor influencing wildfire risk and establish fuel reduction, defensible space, and community preparedness strategies in high-risk areas. The Alameda County CWPP prioritizes vegetation management and evacuation improvements in wind-exposures WUI areas. The Livermore EOP establishes procedures for response during Red Flag Warning conditions, including evacuation coordination and public

notification during wind-driven fire events. In addition, the Bay Area Air District and Alameda County Department of Public Health provide air quality alerts, advisories, and an interactive online map to view current air quality conditions in the region.

Additionally, the same proposed General Plan 2045 goals and policies from the Safety (S) Element and Implementation Plan identified previously in this impact discussion under the “Slope” subheading would also serve to minimize exacerbation of wildfire risks from prevailing winds. Specifically, proposed Policies S-5.5 and S-5.8 would require review of development proposals in FHSZ for site design criteria and appropriate preventative and self-protective measures as well as adherence to the California Fire Safe Regulations and the Fire Hazard Reduction Around Buildings and Structures Regulations. Furthermore, the Safety (S) Element of the proposed General Plan 2045 includes Policy S-1.4, which requires the City to establish a network of equitably located resilience hubs that offer refuge from poor air quality due to regional wildfire smoke.

Future development would be required to meet State and local standards to reduce wildfire risks that may expose people in the EIR Study Area to pollutant concentrations from a wildfire, especially during Diablo wind events.

Vegetation

Other factors, such as vegetation, have the potential to exacerbate wildfire risks. The grassland, brush, and woodland areas of the EIR Study Area are easily ignited, especially during late summer and fall when temperatures and winds are high and relative humidity is low. During these conditions, vegetation can dry out, particularly in areas with unirrigated vegetation, becoming extremely flammable and increasing wildfire risks.

As described in Section 3.18.1, *Regulatory Framework*, the Tri-Valley LHMP, Alameda County CWPP, and Livermore CAP contain several vegetation management, fuel reduction and maintenance, and fuel break policies, programs, and projects to reduce the uncontrolled spread of wildfire due to vegetation on both public and private land. Additionally, all future development, including development within FHSZs and WUIs, would be required to comply with PRC Section 4291, the CFC, the CBC, CWUIC, and the LMC, as applicable. These regulations have specific requirements for new and existing development to create defensible space and extensive fuel reduction within 100 feet of a structure, an ember-resistant zone within 5 feet of a structure, and the overall maintenance of properties to reduce the risk of uncontrolled fires or the spread of fires to other properties.

Furthermore, the proposed General Plan 2045 goals and policies identified previously in this impact discussion under the “Slope” subheading, in addition to the following goal and policies from the Safety (S) Element, are designed minimize wildfire risk through vegetation management, which would also serve to reduce the risk of exposure of future project occupants from pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire:

WILDFIRE

- **Goal S-5:** Plan new development with wildland fire hazards in mind.
 - **Policy S-5.7: Defensible Space.** Coordinate with the Pacific Gas and Electric Company to maintain fire-resistant landscaping around power lines for residents with disabilities to maintain defensible space around their homes.
 - **Policy S-5.10: Debris and Brush Clearing.** Conduct regular debris and brush clearing along public City-owned roads to reduce fire risk. Coordinate with Caltrans to ensure clearing along State-owned roads and highways. Require private road owners to conduct regular debris and brush clearing through various mechanisms, such as the use of mechanical machinery, cattle grazing, or alternative methods. Implement and maintain the Annual Vegetation Management Program through the Livermore-Pleasanton Fire Department to remove hazardous vegetation on unimproved and undeveloped lots in Livermore and Pleasanton, ensuring these properties are maintained in a fire-safe manner.

Proposed Policy S-5.10 would require regular debris and brush clearing along public and private roads and implementation of the Annual Vegetation Management Program through the LFPD to remove hazardous vegetation on unimproved and undeveloped lots to ensure they are maintained in a fire-safe manner.

Summary

Therefore, through compliance with existing State and local regulatory requirements such as the CBC, CFC, CWUIC, PRC Section 4291, and the LMC, as well as implementation of the proposed General Plan 2045 goals and policies, future development would not expose people to the uncontrolled spread of wildfire or pollutant concentrations due to slope, prevailing winds, or other factors. Impacts would be **less than significant**.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than significant. Future development would require the installation of new roadways, emergency water sources, transmission lines, and other utilities to serve future potential development in the EIR Study Area.

Development in the wildfire-prone areas would be required to comply with building and design standards in the CBC, CFC, and CWUIC, as applicable, which include provisions for fire-resistant building materials, clearance of debris, and fire safety requirements during demolition and construction activities. Additionally, PRC Section 4291 requires a defensible space within 100 feet of a structure and an ember-resistant zone within 5 feet of a structure. CPUC also requires maintenance of vegetation around power lines, strict wire-to-wire clearances, annual

inspections of aboveground power lines, and preparation of fire prevention plans for aboveground power lines in high-fire-threat districts.

Furthermore, the proposed General Plan 2045 goals and policies identified previously in impact discussion (a) and (b) and the following goals and policies from the Safety (S) Element are designed to minimize wildfire risk from installation or maintenance of roadways, emergency water sources, and power lines:

- **Goal S-4:** Maintain a safe environment in Livermore through effective fire prevention, emergency response, and collaboration with regional partners and the community.
 - **Policy S-4.8: Water Supply for Firefighting.** Maintain a reliable supply of water for firefighting purposes through long-term water supply planning and installation and maintenance of fire hydrants, storage tanks, and other necessary infrastructure. Coordinate with the California Water Service Company regarding the effects of planned water system improvements on fire flows.
- **Goal S-10:** Make Livermore resilient to the impacts of severe weather and extreme temperatures.
 - **Policy S-10.10: Electrical Grid Reliability.** Coordinate with energy providers, infrastructure operators, and state regulators to ensure the safety and reliability of the local electrical grid to improve energy resilience and minimize the impacts of severe weather and extreme temperatures. Underground existing utilities to reduce damage and service interruptions from severe weather.

Specifically, proposed General Plan 2045 Policy S-1.3 would require the City to maintain and improve designated evacuation routes, including roadway repairs and vegetation management, and coordinate with regional transportation agencies to ensure the safety and integrity of State-owned evacuation routes. Proposed Policy S-5.11 would require regular debris and brush clearing along public and private roads. These policies would serve to ensure such roadways are properly maintained, including removal of vegetation, as necessary, to reduce wildfire risk. Policies S-4.8 would ensure that existing and future development have sufficient water supplies for fire-fighting purposes and structural suppression. Policy S-10.10 would require undergrounding of existing electrical utilities throughout the EIR Study Area, consistent with LMC Chapter 13.48, which would reduce the ignition risk of such infrastructure.

Infrastructure and maintenance activities would be required to comply with the adopted State regulations, CBC, CFC, CWUIC, LMC, and the proposed General Plan 2045 policies, as applicable, which would reduce exacerbating wildfire risks associated with the installation or maintenance of such infrastructure. Therefore, impacts would be **less than significant**.

WILDFIRE

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than significant. As shown on Figure 3.10-3, *Flood Zones*, in Section 3.10, *Hydrology and Water Quality*, parts of the EIR Study Area in the 100-year flood zone include areas along Arroyo Del Valle in the southwestern part of the EIR Study Area; Altamont Creek between Broadmoor and Springtown Boulevard; Las Positas Creek from I-580 to El Charro Road; and Arroyo Mocho from Wente Street to Stanly Boulevard and a segment extending from approximately 0.5 miles west of Isabel Parkway to El Charro Road. The 500-year flood zone primarily includes residential areas along the railroad east of First Street, areas north along Altamont Creek, and the Livermore Municipal Airport.

As shown on Figure 3.7-3, *Landslide Susceptibility*, in Section 3.7, *Geology and Soils*, slopes in the hills along the northern, southern, and eastern edges of the EIR Study Area are in areas with moderate to high landslide susceptibility. Some of these areas are near existing residential neighborhoods. These areas are considered prone to earthquake-caused landslides and susceptible to landslides from precipitation and other causes.

Future development must comply with State and local regulations, such as the CBC and LMC, both of which have provisions to reduce flooding and landslides. The CBC requires a geotechnical investigation that must assess existing landslide susceptibility on a project site and regulates grading, fill placement, slope setbacks, retaining walls, and erosion control to prevent slope failure. LMC Chapter 16.12 also provides regulations to minimize losses from flooding, including restricting uses in areas prone to flooding or erosion, requiring such uses to be protected against flood damage, controlling the alteration of natural floodplains, and controlling filling or dredging that may increase flood hazards. Future development would also be required to comply with best management practices regarding wildfire prevention, action, and recovery, as outlined in the Tri-Valley LHMP and Livermore EOP. The Tri-Valley LHMP identifies mitigation actions such as slope stabilization and erosion control project and stormwater system improvements to reduce downstream flooding. The Livermore EOP establishes procedures for post-fire storm events, including public notification systems for downstream or downslope hazard exposures.

Additionally, the Safety (S) Element of proposed General Plan 2045 contains the following goals and policies that are designed to minimize impacts from flooding and landslides:

- **Goal S-6:** Reduce impacts from geologic and seismic hazards.
 - **Policy S-6.2: Geotechnical Investigations for Development Projects.** Require a site-specific geotechnical investigation for new urban development approval in Alquist-Priolo Earthquake Fault Zones, areas of high landslides susceptibility, and other areas subject to high or moderate geologic hazard, as shown on Figures S-5 and S-7 (of the General Plan)

so that projects are constructed in a manner that mitigates site-specific geotechnical challenges and minimizes the risk from seismic hazards.

- **Policy S-6.7: Erosion and Slope Failure.** Prohibit construction in areas with severe erosion (slopes over 10 percent), as mapped by the US Department of Agriculture’s Natural Resources Conservation Service, and in areas susceptible to slope failure, unless it can be clearly demonstrated through geotechnical engineering analysis that the project will not contribute to increased erosion, sedimentation, or runoff.
- **Goal S-7:** Minimize flood risks to people, property, and critical infrastructure.
 - **Policy S-7.3: Development in Flood Zones.** New development in the 100-year flood zone must avoid obstructing flood flows, increasing erosion, flood risks, pollutant loads, or degrading water quality. Design development to improve community safety, flood protection, and stormwater management, ensuring clear and reliable emergency access, and minimizing public costs associated with emergency response and infrastructure maintenance.
 - **Policy S-7.4: Critical Facilities in Flood Zones.** Prohibit the construction of new critical facilities in the 100-year flood zone, except for flood-control infrastructure.
 - **Policy S-7.5: Flood-Resilient Infrastructure.** Require new public and private service facilities in flood zones to be floodproofed to or above the base flood elevation, including required freeboard, as determined on a project-specific basis.
 - **Policy S-7.6: Essential Facility Integrity.** Ensure essential public facilities maintain structural and operational integrity during and after flood events.

Specifically, proposed Policies S-6.2 and S-6.7 would require site-specific geotechnical investigation for development approval in areas of high landslides susceptibility and prohibit construction in areas susceptible to slope failure, unless it can be clearly demonstrated through geotechnical engineering analysis that the project will not contribute to increased erosion, sedimentation, or runoff. Proposed Policy S-7.3 would require new development in the 100-year flood zone to avoid obstructing flood flows, increasing erosion, flood risks, pollutant loads, or degrading water quality. Proposed Action S-A-6.1 would further support these policies by requiring detailed fault shear zone studies to define building setback requirements.

In addition to the proposed General Plan 2045 goal and policies identified, see Section 3.7, *Geology and Soils*, and Section 3.10, *Hydrology and Water Quality*, for complete lists of goals and policies that would minimize risk of landslides and flooding.

All future development would be required to comply with adopted State, regional, and local plans and regulations addressing wildfire prevention, including the proposed General Plan 2045 goals and policies identified, which would minimize risks of postfire hazards, such as slope instability or drainage changes. Compliance with these regulatory requirements would ensure that impacts from postfire instability would be less than significant. Therefore, this impact is **less than significant**.

WILDFIRE

3.18.5 Cumulative Impact Analysis

The implications of wildfire extend beyond the EIR Study Area. Accordingly, the cumulative setting for wildfire includes the EIR Study Area as well as the surrounding unincorporated county, local jurisdictions, including the cities of Dublin and Pleasanton, and State lands within Moderate, High, or Very High FHSZs in the SRA and LRA. The following discussion considers the proposed Project's potential cumulative contribution to the adverse effects of wildfire.

Would the project have a cumulative effect related to wildfire?

Less than significant. Future development would not impair an adopted emergency response plan or emergency evacuation plan, would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire of uncontrolled spread of wildfire, would not exacerbate wildfire risks due to the installation or maintenance of infrastructure, and would not cause downslope or downstream post-fire flooding or landslide hazards. Similar to the City of Livermore, the cities of Dublin and Pleasanton are largely urbanized, generally outside the SRA and Very High FHSZs and include roads and other fuel breaks, emergency water sources, emergency utilities and maintain other infrastructure that would reduce impacts from wildfires. While unincorporated and incorporated areas, such as Dublin and Pleasanton, near the EIR Study Area are within Moderate and High FHSZs in both SRAs and LRAs, cumulative development in these areas would be subject to the same State regulations as the proposed Project that are intended to reduce the impacts from wildfire.

Future potential development in the EIR Study Area and the surrounding region would be required to consider potential impairment to any applicable emergency response plan or evacuation plan as approved under that applicable authority. Additionally, future development in the EIR Study Area and the surrounding region would be required to comply with the same State and regional regulations, such as PRC Section 4291, CBC, CFC, CWUIC and the Tri-Valley LHMP. Lands throughout eastern Alameda County would also implement wildfire reduction strategies through implementation of the Alameda County CWPP, Alameda County EOP, the Alameda County LHMP, applicable goals and policies in the Alameda County General Plan, and the Alameda County Municipal Code. These provisions establish requirements for ignition-resistant building materials, ember-resistant attic vents, enclosed eaves, fire-resistant decking, and the maintenance of defensible space consistent with PRC Section 4291. Compliance with these regulations would reduce the potential for structure ignition and wildfire spread and associated postfire hazards. Therefore, cumulative conditions would not create or exacerbate any cumulative wildfire impacts and cumulative wildfire impacts would be **less than significant**.

3.18.6 References

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